

*SPECIFICATION AMENDMENTS*

Replace the paragraph beginning at page 1, line 6 with:

This application is a continuation-in-part of U.S. patent application ~~Ser.~~ No. 10/400,190 filed March 27, 2003.

Replace the paragraph beginning at page 1, line 15 with:

To meet ~~the~~ requirements for reliability, lightweight design, and low acoustic noise performance, a heat pipe having no moving parts, unlike pumps, has conventionally been used as a heat transport device for cooling electronics equipment, for example. It has however become difficult in recent years to cool electronic and other types of equipment by using heat pipes as a result of a rapid increase in the amount of heat radiated from the equipment.

Replace the paragraph beginning at page 2, line 6 with:

One of such conventional heat transport devices is disclosed in Japanese Laid-open Patent Publication No. H7-286788, in which a pair of flat headers are interconnected by small-diameter tubes and a liquid is sealed inside the heat transport device, leaving a gas phase portion at one end of a fluid channel. The fluid channel is formed of fins provided inside the headers, and a capillary tube equipped with a heating unit, such as an electric heater, is connected to a particular part of one header. In this heat transport device, a power source supplies a voltage of a pulse-shaped waveform to the heating unit to heat the liquid inside the capillary tube in a steplike fashion, eventually causing the liquid to bump. This produces the effect of a so-called bubble lift pump, like the one shown in FIG. 1 appended to the aforementioned Japanese Laid-open Patent Publication No. H7-286788, ~~in which~~ . In that device, the liquid is driven by a rapid pressure increase as a result of evaporation at one end of the fluid channel, while volumetric changes are absorbed by the gas phase portion at the other end of the fluid channel.

Replace the paragraph beginning at page 29, line 1 with:

The construction of the heat transport device of FIG. 11 may be modified by replacing the turbulence accelerators 10 with microchannel chips 11 as shown in FIGS. 12A-12B, of which FIG. 12B is a sectional view of the microchannel chip 11 taken along ~~lines A-A~~ line XIIB-XIIB of FIG. 12A. The microchannel chip 11 is formed of multiple straight fins, pin

fins, a porous material or foam metal, and has a number of narrow flow paths. This variation of the embodiment offers the same advantageous effect as the construction of FIG. 11.

Replace the paragraph beginning at page 30, line 10 with:

Preferably, one or more grooves should be formed along a side surface of the insert 14 to connect the hollow space at the bottom of the hole 13 to the liquid 5 lying in contact with the inside wall surface 12 as illustrated in FIGS. 13B-13D taken along the section line of Fig. 13A.

Replace the paragraph beginning at page 41, line 21 with:

FIG. 27A is a sectional plan view showing the construction of a heat transport device according to a seventeenth embodiment of the invention and FIG. 27B is a horizontal sectional view taken along ~~lines C-C~~ line XXVIIB-XXVIIB of FIG. 27A. In these Figures, elements identical or similar to those depicted in the foregoing embodiments are designated by the same reference numerals. The construction of this embodiment is characterized in that multiple layers of meandering fluid channels 19 are stacked one on top of another in a manner that the flow direction of the liquid 5 in one layer is the same as, opposite to, or perpendicular to the flow direction of the liquid 5 in another layer.

Replace the paragraph beginning at page 46, line 4 with:

FIG. 30 is a sectional diagram showing the construction of a heat transport device according to an eighteenth embodiment of the invention, and FIGS. 31A-31C are enlarged fragmentary sectional views of the heat transport device of FIG. 30 taken along lines XXXIA-XXXIA, XXXIB-XXXIB, and XXXIC-XXXIC of Fig. 30. Referring to FIG. 30, a container 103 is produced by molding a resin, for example. Liquid reservoirs 1a, 1b provided at both ends of the container 103 are also resin-molded parts. As shown in FIG. 31B, a portion of the container 103 located beneath a thermal-receiver-type heat exchanger 2 forms a microfin structure 83, of which individual fins measure 1 mm or less in both width and depth, to improve the performance of heat transfer between the wall of the container 103 and the liquid 5.

Replace the paragraph beginning at page 47, line 19 with:

FIG. 32 is a perspective diagram showing the construction of an artificial satellite 111 equipped with a phased array antenna 112 incorporating a heat transport device according to

a nineteenth embodiment of the invention for cooling semiconductor devices 113, and FIGS. 33A-33B are sectional diagrams, Fig. 33B being taken along line XXXIIIB-XXXIIIB of Fig. 33A, showing the internal construction of the phased array antenna 112 of FIG. 32. Shown in these Figures is an example in which the heat transport device is applied to the artificial satellite 111, which is an extra-atmospheric mobile unit. The phased array antenna 112 is mounted on a surface of the artificial satellite 111.